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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,415	12/08/2004	Jill Macdonald Boyce	PU020259	2599

7590 05/07/2009
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EXAMINER

MATTIS, JASON E

ART UNIT	PAPER NUMBER
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2416

MAIL DATE	DELIVERY MODE
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05/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,415	Applicant(s) BOYCE ET AL.	
	Examiner JASON E. MATTIS	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-13, 16-19 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 16-19 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/2/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Request for Continued Examination filed 12/1/08. Due to the claim amendments, the previous rejection of claim 7 under 35 U.S.C. 112 second paragraph has been withdrawn. Claims 6, 14, 15, 20, and 21 have been canceled. Claims 1-5, 7-13, 16-19, and 22 are currently pending in the application.

Claim Objections

2. Claims 13, 16-19, and 22 are objected to because of the following informalities: Lines 12 and 13 of claim 13 each contain the phrase "an transmitted amount". This appears to be a typo and it is recommended that both occurrences of this phrase be changed to "a transmitted amount". Claims 16-19 and 22 are objected to since they each depend on objected base claim 13. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2416

4. Claims 13, 16-19, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 13, lines 20-21 of this claim contain the term "the first and second case". Since there is no prior mention any "first case" or "second case" there is improper antecedent basis for this term in the claim. The term "the first and second case" may be attempting to reference the steps labeled "(i)" and "(ii)" in the claim. If this is the case it is recommended that the term "the first and second case" be amended such that it refers to steps "(i)" and "(ii)" of the method.

Claims 16-19 and 22 are rejected since they each depend on rejected base claim 13.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 7, 10-13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meehan et al. (U.S. Pat. 6909753 B2) in view of Zhang et al. (U.S. Pat. 6925120 B2).

With respect to claim 1, Meehan et al. discloses a method for communicating data representing a media object encoded into classified data representing base layer information and enhancement layer information through a network fabric **(See the abstract, column 3 lines 43-57, and column 6 lines 28-35 of Meehan et al. for reference to a method for communicating data representing a video stream, which is a media object, encoded into classified data having a base layer and at least one enhancement layer)**. Meehan et al. also discloses transmitting a composition of the classified data as prioritized data in response to network conditions wherein the classified data comprises at least one base layer information with associated base layer parity information at least one enhancement layer with associated enhancement layer parity information **(See column 5 line 36 to column 6 line 46 and Figure 1 of Meehan et al. for reference to transmitting a prioritized composition of data in response to a signal quality indicator, which is an indication of network conditions, where the data comprises base layer information with an associated base layer error correction code, which is parity information, as well as enhancement layer information, with associated enhancement layer error correction code)**. Meehan et al. further discloses adjusting a composition of prioritized data for transmission in response to a change in network conditions resulting in a loss of data on the network **(See column 6 lines 16-62 of Meehan et al. for reference to changing the composition of transmitted data in response to a change in a signal quality indicator indicating a bit error rate, which is a rate of data loss on the network)**. Meehan et al. also discloses reducing an amount of the enhancement layer

Art Unit: 2416

data and increasing an amount of the base layer parity data (**See column 6 lines 43-62 of Meehan et al. for reference to not mapping enhancement layer data, thereby reducing an amount of enhancement layer data, and increasing the amount of ECC of the base layer when, thereby increasing base layer parity data a signal quality indicator indicates a bad bit error rate meaning network conditions result in a high network loss**). Meehan et al. does not specifically disclose that the amount of base layer data stays the same during the adjusting.

With respect to claim 7, Meehan et al. discloses a method for communicating data representing a media object encoded into classified data representing base layer information and enhancement layer information through a network fabric (**See the abstract, column 3 lines 43-57, and column 6 lines 28-35 of Meehan et al. for reference to a method for communicating data representing a video stream, which is a media object, encoded into classified data having a base layer and at least one enhancement layer**). Meehan et al. also discloses transmitting a composition of the classified data as prioritized data in response to network conditions wherein the classified data comprises at least one base layer information with associated base layer parity information at least one enhancement layer with associated enhancement layer parity information (**See column 5 line 36 to column 6 line 46 and Figure 1 of Meehan et al. for reference to transmitting a prioritized composition of data in response to a signal quality indicator, which is an indication of network conditions, where the data comprises base layer information with an associated base layer error correction code, which is parity information, as well as**

Art Unit: 2416

enhancement layer information, with associated enhancement layer error correction code). Meehan et al. further discloses reducing an amount of the base layer parity data and increasing an amount of the enhancement layer data forming the composition of priority data when network conditions are favorable for rendering the media object **(See column 6 lines 43-62 of Meehan et al. for reference reducing the amount of ECC of the base layer, thereby reducing base layer parity data, and increasing the bit rate of the enhancement layer, thereby increasing enhancement layer data, when a signal quality indicator indicates a good bit error rate meaning network conditions are favorable).** Meehan et al. does not specifically disclose that the amount of base layer data stays the same during the adjusting.

With respect to claim 13, Meehan et al. discloses a method for communicating data representing a media object **(See the abstract and column 3 lines 43-57 of Meehan et al. for reference to a method for communicating data representing a video stream, which is a media object).** Meehan et al. also discloses determining network conditions **(See column 6 lines 36-54 of Meehan et al. for reference to determining signal quality, which corresponds to determining network conditions).** Meehan et al. further discloses transmitting prioritized data in accordance with network conditions **(See column 5 line 36 to column 6 line 46 and Figure 1 of Meehan et al. for reference to transmitting prioritized data in accordance with the signal quality).** Meehan et al. further discloses that the prioritized data is generated as a composition of classified data representing at least one base layer and at least one enhancement layer with parity data being associated with each layer **(See column 5**

Art Unit: 2416

line 36 to column 6 line 46 and Figure 1 of Meehan et al. for reference to the data including both base layer and enhancement layer information with each layer have an associated error correction code, which includes parity data). Meehan et al. also discloses determining the composition of transmitted base layer information with associated parity data and transmitted enhancement layer information with associated parity data in response to network conditions **(See column 6 lines 36-62 of Meehan et al. for reference to changing the composition of transmitted base layer information, enhancement layer information, and associated error correction code information in response to network signal quality).** Meehan et al. further discloses increasing an amount of data associated with the enhancement layer and decreasing an amount of data associated with the base layer parity data when network conditions result in low network loss **(See column 6 lines 43-62 of Meehan et al. for reference to increasing the bit rate of the enhancement layer, thereby increasing enhancement layer data, and reducing the amount of ECC of the base layer, thereby reducing base layer parity data when a signal quality indicator indicates a good bit error rate meaning network conditions result in low network loss).**

Meehan et al. also discloses decreasing an amount of data associated with the enhancement layer and increasing an amount of data associated with the base layer parity data when network conditions result in a high network data loss **(See column 6 lines 43-62 of Meehan et al. for reference to not mapping enhancement layer data, thereby decreasing an amount of enhancement layer data, and increasing the amount of ECC of the base layer when, thereby increasing base layer parity data**

a signal quality indicator indicates a bad bit error rate meaning network conditions result in a high network loss). Meehan et al. does not specifically disclose that the amount of base layer information transmitted stays the same during a first and second case.

With respect to claims 1, 7, and 13, Zhang et al, in the field of communications, discloses keeping the amount of base layer information transmitted constant while adjusting the amount of data transmitted in enhancement layers **(See the abstract, column 5 lines 18-34, column 6 lines 4-53, claim 2, and Figure 5 of Zhang et al. for reference to a method of transmitting data using a base layer bitstream having a constant bit rate, which corresponds to a constant amount of base layer data being transmitted, and using an enhancement layer bitstream having a variable bit rate depending on network conditions).** Transmitting the same amount of base layer data during adjustment in the amounts of other types of data transmitted has the advantage of allowing the most important base layer data to maintain a constant bit rate at all times to increase quality of the transmitted data.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Zhang et al., to combine transmitting the same amount of base layer data during adjustment in the amounts of other types of data transmitted, as suggested by Zhang et al., with the system and method of Meehan et al., with the motivation being to allow the most important base layer data to maintain a constant bit rate at all times to increase quality of the transmitted data.

With respect to claim 2, Meehan et al. discloses that the classified data is pre-encoded **(See column 5 lines 39-45 for reference to the video stream being pre-recorded in a standard television format)**.

With respect to claim 3, Meehan et al. discloses that the transmitting is enabled by a multimedia server **(See column 1 lines 55 to column 2 line 18 of Meehan et al. for reference to transmitting a video stream via a streaming server, which is a multimedia server)**.

With respect to claim 4, Meehan et al. discloses using temporal scalability **(See column 3 lines 62-65 for reference to using time division modulation, which corresponds to temporal scalability, to make the channel coding more or less robust)**.

With respect to claim 10, Meehan et al. discloses using more than one enhancement layer and associated parity data **(See column 5 line 54 to column 6 line 15 of Meehan et al. for reference to using one or more enhancement layers with associated error correction codes)**.

With respect to claims 11 and 12, Meehan et al. discloses that the network conditions considered during the transmission and adjustment step comprise an actual loss and a change in the actual loss of transmitted data **(See column 6 lines 43-46 of Meehan et al. for reference to the signal quality indicator including a bit error rate value, which corresponds to an actual loss of transmitted data)**.

With respect to claim 16, Meehan et al. discloses that the data is sent in the form of packets **(See column 5 line 59 to column 6 line 34 of Meehan et al. for reference to transmitting data in the form of packets)**.

With respect to claim 17, Meehan et al. discloses packing data packets with more enhancement layer information with associated parity data when space is available **(See column 6 lines 47-62 of Meehan et al. for reference to reducing the amount of enhancement layer information and associated error correction code when communication quality is bad, meaning that the amount of enhancement layer information and associated error correction code must be increased during times when the communication quality is not bad and more space is available)**.

With respect to claim 18, Meehan et al. discloses changing the composition of data transmitted in response to a request from a decoder **(See column 6 lines 35-62 for reference to a decoder using a feedback control signal to request a change in the composition of data transmitted)**.

With respect to claim 19, Meehan et al. discloses that the network conditions considered during the transmission and adjustment step comprise an actual loss and a change in the actual loss of transmitted data **(See column 6 lines 43-46 of Meehan et al. for reference to the signal quality indicator including a bit error rate value, which corresponds to an actual loss of transmitted data)**.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meehan et al. in view of Zhang and in further view of Van Gestel et al. (U.S. Pat. 5579183).

With respect to claim 5, the combination of Meehan et al. and Zhang et al. does not specifically disclose transmitting data as data packets that are sequentially numbered.

With respect to claim 5, Van Gestel et al., in the field of communications, discloses transmitting data as data packets that are sequentially numbered (**See column 3 lines 47-61 and column 4 lines 13-44 of Van Gestel et al. for reference to transmitting MPEG packets including a packet sequence number**). Transmitting data as data packets that are sequentially numbered has the advantage of allowing data to be more easily received and decoded in the proper order (**See column 4 lines 13-44 of Van Gestel et al. for reference to the advantage**).

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Van Gestel et al., to combine transmitting data as data packets that are sequentially numbered, as suggested by Van Gestel et al., with the system and method of Meehan et al. and Zhang et al., with the motivation being to allow to be more easily received and decoded in the proper order.

8. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meehan et al. in view of Zhang et al. and in further view of Boyce (U.S. Pat. 6317462 B1).

With respect to claim 8, the combination of Meehan et al. and Zhang et al. does not specifically disclose encoding data with a forward error correction code using Reed Solomon codes.

With respect to claim 8, Boyce, in the field of communications, discloses encoding data with a forward erasure correction code using Reed Solomon codes **(See the abstract of Boyce for reference to encoding video data with a systematic forward erasure code such as a Reed Solomon code)**. Encoding data with a forward erasure correction code using Reed Solomon codes has the advantage of providing more robust protection against errors.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Boyce, to combine encoding data with a forward erasure correction code using Reed Solomon codes, as suggested by Boyce, with the system and method of Meehan et al. and Zhang et al., with the motivation being to provide more robust protection against errors.

With respect to claim 9, Meehan et al. discloses selecting the composition of data to be transmitted based on network conditions by accessing a data store corresponding to data class **(See column 5 line 36 to column 6 line 46 and Figure 1 of Meehan et al. for reference to data being separated and stored into different base and enhancement layers and for reference to selecting the composition of data to be transmitted from the stored base and enhancement layer information based on signal quality)**.

Allowable Subject Matter

9. Claim 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1-5, 7-13, and 16-19 have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's arguments with respect to claim 22 have been fully considered and are persuasive. The rejection of claim 22 under 35 U.S.C. 103(a) has been withdrawn.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Van Der Schaar (U.S. Publication US 2002/0037037) discloses a system and method of mapping I frames, B frame, and P frames to a base layer and an enhancement layer; however does not disclose mapping these frames as described in claim 22 of the application.

Art Unit: 2416

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON E. MATTIS whose telephone number is (571)272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason E Mattis
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